


October 23, 1998

MEMORANDUM

TO: Orville D. Green
Assistant Administrator
Air and Hazardous Waste

FROM: Susan J. Richards, Chief
Air Quality Permitting Bureau 

SUBJECT: Issuance of Tier II Operating Permit #021-00015 to
North Idaho Energy Logs (Moyie Springs)

PROJECT DESCRIPTION

This project is for the issuance of a Tier II Operating Permit (OP) to North Idaho Energy Logs (NIEL). NIEL produces compressed fireplace logs from wood waste. The Tier II OP will establish the facility as a synthetic minor source and assure that no national ambient air quality standards (NAAQS) are violated.

DISCUSSION

On February 26, 1998, DEQ representatives inspected NIEL. During this inspection, it was determined that one of the cyclones was possibly not controlling emissions properly. In this case, the emission factor which was used for the PTC analysis may not be appropriate for this cyclone. Therefore, it was determined that a Tier II OP should be issued to assure the National Ambient Air Quality Standards are not violated.

On July 10, 1998, a proposed Tier II OP was issued for public comment. The public comment period was held from August 3, 1998, through September 2, 1998. On August 10, 1998, and August 13, 1998, DEQ received significant comments about the content of the proposed OP. These comments were addressed by DEQ in the response package and the technical analysis memo and incorporated into the final OP. In order to adequately respond to these comments, DEQ formally requested a voluntary forty-five (45) day extension to the final permit packet from the facility to analyze and process the submitted information.

FEES

This facility is not a major facility as defined in IDAPA 16.01.01.008.14 (*Rules for the Control of Air Pollution in Idaho*). Therefore, registration fees are not applicable in accordance with IDAPA 16.01.01.527. However, a Tier II operating permit application fee of \$500.00 is required in accordance with IDAPA 16.01.01.470.

RECOMMENDATION

Based on the review of the Tier II OP application, inspections, applicable state and federal regulations concerning the permitting of air pollution sources, and comments received, the Bureau staff recommends that North Idaho Energy Logs be issued a Tier II OP for their facility. The facility has been notified in writing of the required Tier II application fee of five hundred dollars (\$500.00). The permit will be issued upon receipt of the fee.


ODG\SJR\RM:jrg...\permits\NIEL\niel-f.IMM

cc: P. Rayne/AFS
G. Fransen, CDA Regional Office
Source File
COF

October 23, 1998

MEMORANDUM

TO: Susan J. Richards, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste

FROM: Raymond McDougal, Air Quality Engineer
Air Quality Permitting Bureau
New Source Review Section 

THROUGH: Daniel P. Salgado, Permits Manager
Air Quality Permitting Bureau
Operating Permits Section

SUBJECT: Technical Analysis for Tier II Operating Permit #021-00015
North Idaho Energy Logs, Moyie Springs

PERMITTEE:	North Idaho Energy Logs P.O. Box 571 Moyie Springs, Idaho 83845
PERMIT NO:	021-00015
STANDARD INDUSTRIAL CLASSIFICATION (SIC):	2499
DESCRIPTION:	Pulp & Paper & Wood – Other Not Classified
KIND OF PRODUCTS:	Compressed Fireplace Logs and Compressed Wood Pellets
RESPONSIBLE OFFICIAL:	Bob Pluid, President
PERSON TO CONTACT:	Bob Pluid, President
TELEPHONE NO:	(208) 267-5311
# OF FULL-TIME EMPLOYEES:	18
FACILITY CLASSIFICATION:	B
COUNTY:	Boundary
AIR QUALITY CONTROL REGION:	63
UTM COORDINATES:	557.1, 5396.5
EXACT PLANT LOCATION:	Adjacent to Old Highway 2, one mile west of Moyie Springs

1. PURPOSE

The purpose of this memorandum is to set out the legal and factual basis for this proposed Tier II Operating Permit (OP) in accordance with IDAPA 16.01.01.400, Rules for the Control of Air Pollution in Idaho (Rules).

Idaho Division of Environmental Quality (DEQ) staff have reviewed the information provided by North Idaho Energy Logs (NIEL) regarding the operation of their facility located near Moyie Springs, Idaho. This information was submitted based on the requirements for Permits to Construct (PTC) in accordance with Section 16.01.01.200 of the Rules and was used to develop the Tier II OP.

Based on the information submitted, DEQ has drafted a Tier II OP for NIEL. The permit will be submitted for public comment and, if required, a public hearing will be held. After public comment, a final permit will be issued and forwarded to the U.S. Environmental Protection Agency (EPA) in accordance with IDAPA 16.01.01.404.02.f (Rules).

2. SUMMARY OF EVENTS

On February 26, 1998, DEQ representatives inspected NIEL. During this inspection, it was determined that the second cyclone in line from the dryer (Cyclone #2) was possibly not controlling emissions properly. In this case, the emission factor which was used for the PTC analysis may not be appropriate for this cyclone. Therefore, DEQ determined that a Tier II OP is necessary in accordance with IDAPA 16.01.01.401.03.

On July 10, 1998, a proposed Tier II OP was issued for public comment. The public comment period was held from August 3, 1998, through September 2, 1998. On August 10, 1998, and August 13, 1998, DEQ received significant comments about the content of the proposed OP. These comments were addressed by DEQ in the response package and the technical analysis memo and incorporated into the final OP. In order to adequately respond to these comments, DEQ formally requested a voluntary forty-five (45) day extension to the final permit packet from the facility to analyze and process the submitted information.

3. BASES OF THE ANALYSIS

The following documents were relied upon in preparing this memorandum and the Tier II OP:

- (1) Information provided by NIEL;
- (2) AP-42;
- (3) Idaho DEQ Emission Factor Guide for Wood Industry; and
- (4) Idaho Rules

4. REGULATORY ANALYSIS - GENERAL FACILITY

4.1 Facility Description

4.1.1 General Process Description

Woodwaste is hauled in via truck from nearby sawmills and is stored in piles. This material is loaded into a rotary dryer by a front-end loader where it is dried from 25-28% to approximately 9%. The dryer throughput capacity is six tons per hour (6 T/hr), but bottle-necking in the process limits the throughput to 3.75 T/hr. Dried material is conveyed in air ducts to the log machines and the pellet machine. The air conveying system includes two (2) cyclones, one just after the dryer and one just before the log machines. The cyclones are used to obtain the necessary flow rates and air to product ratios. A third cyclone is used to separate air from log trimmings which are recirculated back into the machines and/or the pellet machine. This cyclone is also used to control emissions from the pellet cooler. From the machines, logs are stacked on pallets and trucked off-site.

4.1.2 Facility Classification

This facility is not a Designated Facility as defined in IDAPA 16.01.01.006.25. The facility is not a Major Facility as defined in IDAPA 16.01.01.006.54 and IDAPA 16.01.01.008.14.

4.1.3 Area Classification

The Moyie Springs area is designated as attainment or unclassifiable for all criteria air pollutants.

4.1.4 Permitting History

On August 29, 1997, NIEL was given a PTC exemption for the facility as it was configured and operated at that time. This exemption was based on DEQ developed emission factors and information submitted by NIEL. It was also based on the assumption that the cyclones would operate appropriately for the application in which they were being used. On February 26, 1998, DEQ representatives inspected NIEL and determined that Cyclone #2 may not be controlling emissions appropriately. As a result of this inspection, Dan Pitman, P.E., DEQ New Source Review Manager, made the recommendation that an OP be issued.

5. REGULATORY ANALYSIS - EMISSIONS UNITS

5.1 All Facility Point Sources

5.1.1 Emission Unit Description

Point sources at this facility are the following: three (3) cyclones, one dryer vent, and one wood stove stack.

5.1.1.(a) Permit Requirement - [IDAPA 16.01.01.625 VISIBLE EMISSIONS]

5.1.1(a)(1) Applicability

This requirement is applicable to all point sources.

5.1.1(a)(2) Compliance Demonstration Method

DEQ's "Procedures Manual for Air Pollution Control", Section II (Visible Emissions Evaluation Manual).

5.1.1(a)(3) Monitoring

Visible emissions evaluations will be required on a weekly basis.

5.1.1(a)(4) Recordkeeping

Visible emissions test results will be recorded and maintained on-site.

5.2 Cyclones

5.2.1 Emission Unit Description

Cyclone #1 is used to control the air to product ratio as the product is transferred from the dryer to the ducts. Cyclone #2 is used to separate the air from the product before it is fed to the log machines. The stack height is thirty-five (35) feet. Stack diameter is twenty-one (21) inches. Flow rate is 13,400 cubic feet per minute and temperature is ambient. Cyclone #3 is used to recycle log trimmings back to the process and to control emissions from the pellet dryer.

5.2.1.(a) Permit Requirement - [National Ambient Air Quality Standards (NAAQS) PARTICULATE EMISSIONS]

Emission rate limits will be imposed on the cyclones. These emission rates are summarized in the following table.

Table 1. Permitted Emission Rate Limits

Cyclone	Emission Rate Limit (lb/hr)	Emission Rate Limit (ton/yr)
1	2.1	9.2
2	8.0	35.0

The chipper hog baghouse was given a permitted emission rate equal to the original predicted rate for that point source. Prior to the baghouse installation, this point source was controlled solely by a cyclone. Visible emissions from the cyclone indicated that the emission factor used may not have accurately predicted the emissions from this cyclone so the facility voluntarily installed the baghouse. The emissions should be well below the predicted rates now that the baghouse is in operation.

The estimated emission rate for the recycled material cyclone is 2.8 E-2 lb/hr. In determining an emission rate limit for the dryer cyclone, the recycle cyclone emission rate estimate was doubled for flexibility and the chipper hog baghouse emissions were set at the permitted rate. A modeling analysis was then conducted to determine the rate at which the dryer cyclone could emit without violating the NAAQS. Calculations are provided in Appendix A. Modeling was performed by Mary Walsh, DEQ Meteorologist.

5.2.1(a)(1) Applicability

The specific emission rates apply only to Cyclones #1 and #2.

5.2.1(a)(2) Compliance Demonstration Method

A baghouse will be installed.

5.2.1(a)(3) Monitoring

Monitoring of throughput and proper baghouse operation will be required.

5.3 Entire Facility

5.3.1 Emission Unit Description

Sources of fugitive emissions include the following: woodwaste dumping, woodwaste storage, woodwaste transfer, vehicle traffic, and others.

5.3.1.(a) Permit Requirement - [IDAPA 16.01.01.650 FUGITIVE DUST]

5.3.1(a)(1) Applicability

This requirement is applicable to the entire facility.

5.3.1(a)(2) Compliance Demonstration Method

Visible emissions shall not be observed leaving the property boundary for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period.

5.3.1(a)(3) Monitoring

The Permittee shall log control measures taken to reasonably control fugitive emissions. Visible emissions evaluations will be required on a weekly basis.

5.3.1(a)(4) Recordkeeping

Visible emissions test results will be recorded and maintained on-site. The control measures log shall be maintained on-site.

5.3.2 Emission Unit Description

Point sources of the facility: Cyclones #1, #2, and #3 and the wood stove.

5.3.2.(a) Permit Requirement - [IDAPA 16.01.01.700 PROCESS WEIGHT RATE]

5.3.2(a)(1) Applicability

This requirement is applicable to the entire facility.

5.3.2(a)(2) Compliance Demonstration Method

Compliance is demonstrated by comparing emissions estimates and throughput to the table found in IDAPA 16.01.01.701.

5.3.2(a)(3) Monitoring

Throughput monitoring is required on a daily basis.

5.3.2(a)(4) Recordkeeping

The Permittee will be required to maintain monitoring records on-site for two (2) years.

6. REGISTRATION FEES

This facility is not a major facility as defined in IDAPA 16.01.01.008.14 (Rules). Therefore, registration fees are not applicable in accordance with IDAPA 16.01.01.527. As shown in Appendix A, NIEL also had estimated emissions of less than 100 tons prior to 1993. Therefore, fees in accordance with IDAPA 16.01.01.527 were not applicable in the past either. The facility is required to pay a Tier II application fee of \$500.00 upon issuance of this permit in accordance with IDAPA 16.01.01.470.

7. AIRS FACILITY SUBSYSTEM

A copy of the AIRS Data Sheet is included as Appendix B.

8. PAST VIOLATIONS OF NAAQS

It is impossible to know whether National Ambient Air Quality Standards (NAAQS) were violated by this facility prior to the installation of the baghouse. However, according to the modeling analysis performed by Mary Walsh, DEQ Meteorologist, the #2 Cyclone would have had to emit over 7.3 lb/hr of PM-10 in worst case meteorological conditions to violate the NAAQS standards. This is over 5 times the estimated emission rate. It is unlikely that the cyclone would have emitted PM-10 at that rate.

9. RECOMMENDATION

Based on the review of the application materials, inspections, comments received, and all applicable state and federal regulations, the Bureau staff recommends that DEQ issue a final Tier II OP to North Idaho Energy Logs. The facility has been notified in writing of the required Tier II application fee of five hundred dollars (\$500.00). The permit will be issued upon receipt of the fee.

SJRDP/ARM:jf...permits/NIEL/niel.TAM

cc: P. Rayne/AFS
G. Fransen, CDA Regional Office
Source File
COF

APPENDIX A

Cyclone # 1

- Current and Past estimate

$$E = (3.8 \text{ ton/hr})(0.35 \text{ lb/ton}) = \underline{1.3 \text{ lb/hr}} \leftarrow$$

$$= 5.7 \text{ ton/yr}$$

- Maximum capacity

$$E = (6.0 \text{ ton/hr})(0.35 \text{ lb/ton}) = \underline{2.1 \text{ lb/hr}} \leftarrow$$

$$= 9.2 \text{ ton/yr}$$

Cyclone # 2

* Assume emission rate is equal to emissions of cyclone #1. This is a conservative estimate. Emissions should be much less since the emissions are controlled by a baghouse.

∴ - Current and Past estimate

$$\underline{5.7 \text{ ton/yr}}$$

- Maximum capacity

$$\underline{2.1 \text{ lb/hr}} = \underline{9.2 \text{ ton/yr}}$$

Cyclone #3

- 8000 cfm
- 38'
- 48"

- Recycle rate

$$\text{Test 1 } \frac{29\text{-lb}}{18\text{-min}} = 1.6\text{-lb/min}$$

$$\text{Test 2 } \frac{28\text{-lb}}{20\text{-min}} = 1.4\text{-lb/min}$$

$$\text{Test 3 } \frac{32\text{-lb}}{18\text{-min}} = \underline{1.7\text{-lb/min}} \leftarrow \text{max}$$

$$\text{max} = 102.0\text{-lb/hr} = 5.1\text{E-2-ton/hr}$$

using DER emission factor:

$$E = (5.1\text{E-2-ton/hr}) \times (0.35\text{-lb/ton}) = \underline{1.8\text{E-2-lb/hr}} \leftarrow$$

prev. and current

* based on current throughput of 3.8-ton/hr

- adjust for maximum throughput which may occur in future

$$\frac{1.8\text{E-2-lb/hr}}{3.8\text{-ton/hr}} = \frac{x}{6\text{-ton/hr}}$$

$$\text{Max Emission} = \underline{2.8\text{E-2-lb/hr}} \leftarrow$$

maximum

Total Maximum emissions:

Cyclone #1	9.2-ton/gr
Cyclone #2	9.2-ton/gr
Cyclone #3	1.8-ton/gr
Wood Store	0.1-ton/gr

$$\underline{20.3\text{-ton/gr}} \leftarrow$$

APPENDIX B

ABBREVIATED AIRS DATA ENTRY SHEET

Name of Facility:

AIRS/Permit #:

PTC Issued Date:

*Source/Emissions Unit Name (25 spcs)

(Please use name as indicated in permit)

SCC #

(8 digit #)

Air Program

(SIP/NESHAP/
NSPS/PSD)

* Wood chip dryer

Cyclone #1

Cyclone #2

Cyclone #3

30790003

3070080 8

50700808

30700808

SIP

SIP

SIP

SIP

**Response to Comments and Questions Submitted During a
Public Comment Period on North Idaho Energy Logs'
Proposed Tier II Operating Permit (OP) #021-00015 for the Entire Facility**

I. INTRODUCTION

The public comment period on North Idaho Energy Logs' (NIEL) permit application and proposed Tier II permit for the facility near Moyie Springs was held from August 3, 1998, through September 2, 1998. Information was made available to the public at the Division of Environmental Quality (DEQ) regional office in Coeur d'Alene, the Moyie Store in Moyie Springs and the Boundary County Library in Bonners Ferry. Comments were received by the DEQ in the form of written comments submitted by mail.

The permit application is for a Tier II operating permit for the entire facility. The equipment involved in the operations at NIEL's facility include: front-end loader, rotary dryer, three cyclones, chipper hog, baghouse, pelletizer, log machines and wood stove. The point sources are: two cyclones, baghouse and wood stove. The primary pollutant of concern is PM-10. The permitted PM-10 emission limits for this facility total 57 tons/yr.

Only one party, Holly Gardens, submitted comments. Two submittals were received from Holly Gardens. These two submittals were similar but differed enough to consider them as two separate submittals. The specific comments concerning air quality aspects of the facility's application and DEQ's final action have been summarized below and are followed by DEQ's response. Some comments have been combined and paraphrased in order to eliminate duplication and provide a clearer summary. Each response to a comment discusses only the facts necessary to address the comment.

II. COMMENTS AND RESPONSES

Comment #1: North Idaho Energy Logs has fugitive dust problems due to vehicle traffic and sawdust moving/ mixing. "What, specifically, is NIEL required to do, to take care of the mess?"

DEQ Response: The proposed permit addresses fugitive emissions in two sections. In Section 1.3, the permit contains a limit to visible emissions crossing the property boundary. It states that visible emissions shall not be observed leaving the property boundary for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period. Section 2.3 addresses the control of fugitive emissions. This section not only mandates the control of fugitives but also lists several methods of control which may be used. The section reads as follows:

2.3 Reasonable Control of Fugitive Emissions

All reasonable precautions shall be taken to prevent particulate matter from becoming airborne as required in IDAPA 16.01.01.651. In determining what is reasonable, considerations will be given to factors such as the proximity of dust emitting operations to human habitations and/or activities and atmospheric conditions which might affect the movement of particulate matter. Some of the reasonable precautions include, but are not limited to, the following:

- 2.3.1 Use, where practical, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of lands;
- 2.3.2 Application, where practical, of asphalt, oil, water or suitable chemicals to, or covering of dirt roads, material stockpiles, and other surfaces which can create dust;

- 2.3.3 Installation and use, where practical, of hoods, fans and fabric filters or equivalent systems to enclose and vent the handling of dusty materials. Adequate containment methods should be employed during sandblasting or other operations;
- 2.3.4 Covering, where practical, of open bodied trucks transporting materials likely to give rise to airborne dusts;
- 2.3.5 Paving of roadways and their maintenance in a clean condition, where practical; or
- 2.3.6 Prompt removal of earth or other stored material from streets, where practical.

In response to this comment Section 3.4 was added which requires a log to be maintained which records all actions taken to control fugitive emissions.

Comment #2: "...it appears that the Permit to Operate did not take into account the weight rate limit on emissions."

DEQ Response: Section 5.3.2 of the technical memorandum dated July 10, 1998, addresses the process weight rate requirement in accordance with IDAPA 16.01.01.700. The analysis shows that the facility is in compliance with Process Weight Rate.

Comment #3: "When raw material is processed, there is still dust shooting out of stack number one". "There is additional dust spewing from stack number three". The commentor contends that Cyclones #1 and #3 should be required to have baghouses.

DEQ Response: Cyclone #3 is used to recirculate log trimmings. This material is very dense and the particles are large in size. The cyclone should control this type of material very effectively. As stated in the technical memorandum of July 10, 1998, the emission estimates for this cyclone are only 2.8E-2 lb/hr. Neither Cyclone #1 nor Cyclone #3 has been declared out of compliance with the 20% opacity requirement in any of the DEQ inspections. Cyclone #1 has read between 0 and 15% and Cyclone #3 has always read 0% opacity during DEQ inspections. As stated in the Technical Memorandum, there has not been any indication from DEQ inspections or visits that the factors used to estimate emissions from Cyclones #1 or #3 are not appropriate. Upon issuance of the permit, Cyclones #1 and #3 will be assumed to be in compliance with the National Ambient Air Quality Standards so long as they are operating properly. Proper cyclone operation will be assumed unless a certified opacity reader records opacity exceeding 20% emanating from any of the stacks. In response to this comment, however, an emission rate limit for Cyclone # 1 (Dryer Cyclone) has been added to the final permit. This emission rate limit was determined by fixing the baghouse emissions at 2.1 lb/hr, fixing Cyclone #3 emissions at twice the predicted rate and determining the maximum rate Cyclone #1 can emit without violating the National Ambient Air Quality Standards (NAAQS). The modeling analysis was performed by Mary Walsh, DEQ Meteorologist. For details on this modeling analysis, refer to Mary Walsh's technical memorandum in the facility source file.